From: Beth Ericksen
To: papair@msn.com
Date: 9/5/2007 2:31 PM
Subject: thomas

Dan-

For tomorrow, I would like to capture the following information if possible (let me know):

1. the property lines in all directions
2. the setback is 100 feet from the property lines
3. the undisturbed area of about 8 acres, with 3 acres being part of the setback
4. can they identify slopes up to 30 degree that they will be collecting topsoil from
5. berm above highwall
6. signs above highwall
7. make sure the east side of the property is fenced with t post and 4 foot wire fence topped by 2 strands of barbed wire.
8. show us your erosion control practices. How is stormwater being contained and how is sediment is being controlled.
9. show us the topsoil storage

9
3-0.10
48.8
1.2

If there any topsoil areas on site, show us where they are.
where is the processing materials stockpile

Public Safety/Welfare →
Drainages ↳ how are drainages being managed
Erosion Control ↳ control
Deleterious ↳ safely removed
Soils ↳ stored in stable condition
Concurrent reclamation
↳ safe, environmentally stable

watershed
run off possible

Lakeview uses an open-face extraction method. In this system, a horizontal advance is made into a hillside, usually at several elevation levels. The upper level material is pushed or conveyed to subsequent lower levels until arriving at the processing level which is often the original grade level. After processing, the products are stored in piles until transported off-site by trucks. Mining slowly advances upslope until reaching an elevation at which the desired rock unit is topped. At that time, final mining focuses on developing a bench and highwall system, starting down from the upper-most bench. At the conclusion of mining, a series of benches and interim highwalls remain. The final highwall slope will average 45 degrees.

Unconsolidated surface material would be extracted, crushed, and screened. Exposed rock would be blasted, if necessary. Resultant products would include bankrun, cobble, gravel, road base, and sand. No process waste materials would be generated. Water needed for the Thomas pit would come from the tanks stored at the Beck Street Quarry, located 1300 feet (0.25 mile) south of the property area, and from a 1½" waterline connected to NSL culinary water. Again, no tailing facilities, storage ponds, sediment ponds or water treatment ponds would be necessary. No water would be discharged from this property; thus no Utah Division of Water Quality permit would be necessary.

3.3 Disturbed Area

The total permit area covers 50 acres. The Thomas Pit property is 48.8 acres. All of the materials recoverable from 39 acres (21 acres pit floor; 18 acres highwall) within the property boundaries are considered to be saleable. Additional disturbance totaling 1.2 acres for access roads and driveways (described in detail below) occurs *outside* the property boundaries. The total acreage to be disturbed when mining is complete is approximately 40.2 acres.

There would be no mining disturbance in the 100-foot setback area along the north, east, and south sides of the property, circumscribing the final highwall. This setback area (approximately 8.0 acres) provides a buffer between the mined area and the adjacent properties. The additional 1.8 acres of Thomas Pit property include the northern point of the property along Highway 89, and a landscape berm (to be constructed during the initial course of operations), that provides a buffer between the pit operations area and the adjacent Highway 89. LOOK FOR THIS BERM

Outside the property boundary, there are portions of access roads which extend off the mining area into the setback area and off the property on the south, east and west sides, affecting 1.2 acres. On the south side, a road switchback extends onto the State Road Commission parcel, affecting an area of approximately .2 acres. On the Highway 89 side, there are driveways that extend off the Thomas property into the Utah Department of Transportation (UDOT) right-of-way (Figure 3a), affecting approximately .4 acres. On the east side, the upper access road extends through the Granite Construction Company parcel and eventually connects into the Lakeview Beck Street property (Figure 3b). This upper access road affects approximately .6 acres.

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Outside the property boundary, there are portions of access roads which extend off the mining area into the setback area and off the property on the south, east and west sides, affecting 1.2 acres. On the south side, a road switchback extends onto the State Road Commission parcel, affecting an area of approximately .2 acres. On the Highway 89 side, there are driveways that extend off the Thomas property into the Utah Department of Transportation (UDOT) right-of-way (Figure 3a), affecting approximately .4 acres. On the east side, the upper access road extends through the Granite Construction Company parcel and eventually connects into the Lakeview Beck Street property (Figure 3b). This upper access road affects approximately .6 acres.

The final pit bottom within the permit area will encompass approximately 21 acres. This entire area will be reclaimed to the extent that it will be stabilized and prepared for post-mining land use as a light industrial or business development site. The final highwall area will encompass approximately 18 acres. Figures 2 through 4b show the current and final mine configuration.

In total, the disturbance from Thomas Pit operations will include the 39 acres within the active mining area of the property and 1.2 acres in access roads and driveways.

3.4 Nature of the Materials to be Mined and Production Rates

The material to be mined is classified as unconsolidated alluvium, conglomerate, and consolidated carbonate rock.

Lakeview's Thomas Pit operations are proposed to continue for approximately 9 years. The total volume that is available to be mined from 2005 through the life of the Thomas Pit is approximately 7 to 10 million tons, depending upon market conditions. The annual production from this pit is estimated at 650,000 tons.

3.5 Existing Soil Types

The Natural Resource Conservation Service Soil Survey (NRCS) of Davis-Weber Area, Utah lists the property as being in two or three miscellaneous land types: Kilburn-Francis Association (30 to 50 percent slopes, eroded) (map unit KFG2) or Kilburn Gravelly Sandy Loam (6 to 10 percent slopes) (map unit KgD). Both soil types are considered very deep and well-drained with moderately rapid runoff. However, most of the undisturbed topsoil is located in the 100-foot setback area on the north, east, and west sides of the pit. Soil descriptions and a soils map printed from the NRCS Web Soil Survey are located in Appendix F.

3.6 Plan for Protecting and Redepositing of Topsoils

Few areas of undisturbed topsoil remain in the Thomas Pit proposed disturbance area due to previous mining activity. Undisturbed areas that total about 8 acres remain in the steep northeast and southeast corners of the property; approximately 3 acres of this is part of the setback area. Undisturbed topsoil in the 100-foot setback area would not be impacted during operations. On the steep slopes of the remaining 5 undisturbed acres, it is not considered practical to strip topsoil in advance of operations, but Lakeview would save topsoil as much as possible on slopes up to 30 degrees.

The berm constructed above the highwall would be constructed from adjacent materials, such that a trench/berm system is created. The layer of topsoil material on the surface in the area of the proposed trench/berm system would be gathered to a depth of approximately 12 inches at the time the berm is constructed. This soil would be stored temporarily adjacent to this narrow corridor, and used for reclamation of the berm.

3.7 Existing Vegetative Communities and Cover Levels, Revegetation

Under R647-4-106 (7), the operations plan must provide a description of existing vegetative communities and cover levels, sufficient to establish revegetation success standards at 70% of pre-mining vegetative cover. Vegetation cover occurs on very little of the Thomas Pit area. Within the property boundaries, the vegetative cover has undergone extensive disturbance due to past mining operations. Some vegetation remains in the northeast corner of the property, however this is within the 100-foot buffer and would not be disturbed. Vegetation in the Thomas Pit area is similar to that described in the Revised NOI (JBR 2006) and summarized below.

The final surface will include a 21-acre fairly level pit floor adjacent to Hwy. 89, and a series of highwalls which will be stabilized as described in R647-4-111 (7).

Vegetation field surveys were conducted on similar Beck Street properties in July 2004. The July 2004 species list is shown in Appendix C and includes a table that provides a summary of life forms and non-vegetative cover measured during the field survey. Excluding the category listed as weedy species, the summary table shows that vegetative cover ranged from 15 to 47 percent in the individual quadrats, and averaged 34 percent.

3.8 Depth to Groundwater, Extent of Overburden and Geologic Setting

The Thomas Pit operations are located 1300 feet (0.25 mile) north of the Lakeview Beck Street Quarry in Davis County, between Highway 89 and the Wasatch Cache National Forest boundary, in the steep west-facing foothills of the Wasatch front.

Depth to Groundwater

There are no wells within the area covered by the Thomas Pit operations. Based upon static water level information submitted to the Utah Division of Water Rights (2005) for a well located a few hundred feet north and west of the property, groundwater may be found about 60 feet below the natural ground surface. The shallow water table in the Staker well, located about 1.25 miles to the south, is approximately 20-25 feet below Staker's pit floor (JBR 2005).

Extent of Overburden Material

The remaining material to be mined at the Thomas Pit through the life of mine is about 7 to 10 million tons, depending upon market conditions. All material is processed and saleable. There would be no overburden to remove or stockpile.

Geologic Setting

The Thomas Pit property is located on a geomorphic feature called the Salt Lake Salient. The feature is the result of the termination of two major fault segments of the Wasatch Fault Zone. The Warm Springs Fault is one of the fault segments and is a late Tertiary structural feature. The fault brought Paleozoic carbonate rocks to the surface

and exposed them in the footwall of the fault, where they are presently providing an important resource to the local rock aggregate business.

The Paleozoic rocks range from Cambrian to Mississippian in age and contain two major unconformities. Tertiary conglomerate and volcanic rock unconformably overlie the block of Paleozoic rock. The Tertiary sedimentary rock and the Paleozoic carbonate rock have been tilted during their tectonic history such that they generally dip to the southeast and strike to the northeast. The final sedimentary deposits came during the Quaternary and chiefly in the Pleistocene epoch. These deposits are lacustrine in origin left from Lake Bonneville. The lake deposits consist of layers of silt, sand, and gravel, and are generally flat lying.

The Warm Springs Fault created a zone of intense fracturing near the fault, decreasing in intensity to the east, away from the fault. This fracturing enables extraction of rock without blasting in many areas. The fracturing also provides a conduit for hot groundwater in some locations, hence the name of the fault.

3.9 Proposed Location and Size of Overburden Piles

The overburden material is recovered and processed through the aggregate production circuit. Finished sizes are sold as product. There is no overburden disposal or stockpiling. There is no waste rock created which requires disposal or storage. After processing, the products are stored onsite in piles until transported off-site by trucks.

IV. Operation Practices (Rule R647-4-107)

Lakeview will minimize hazards to the public safety and welfare during operations. This will include such measures as:

- All trash, scrap metal, and wood, and extraneous debris will be temporarily stored at a designated location prior to being properly disposed of offsite.
- Any exploratory or other drill holes (none predicted at this time) will be plugged or capped as set forth in Rule R647-4-108.
- Warning signs will be posted in locations where public access to operations is readily available, including at the points of exit/entry from the frontage road to the open pit and processing facilities. The entrance from the frontage road is gated. Warning signs advising the public of blasting protocols at the Thomas pit will be posted on all access roads to the pit area at the appropriate locations as required by MSHA.
- Four-foot high pit safety berms will be installed around the highwalls of the Thomas Pit and signed every 100' to warn the public of the presence of the pit.

- The eastern property boundary will be fenced with T-post and 4 foot wire fence topped by 2 strands of barbed wire.

Avoid or Minimize Damages to Natural Drainage Channels: No stream channels are within or of concern in or near the Thomas Pit area.

Erosion Control: Operationally, Lakeview does not expect to find runoff to be excessive or to require ditching, routing or other structural controls. Neither storm water runoff, nor eroded sediments will leave the property. Lakeview would apply various best management practices, such as proper waste disposal, spill cleanup, oil handling, and diesel storage, which would minimize impacts to the water quality of on-site storm water.

Deleterious or Acid-forming Materials: Deleterious or acid-forming materials are not expected to be encountered during the mining and milling operations. Diesel fuel and oil would be stored in a manner to comply with regulations.

Soils: There is no overburden and very little topsoil likely to be salvaged in the area to be mined. No overburden would be stockpiled. All rock material from the site is considered to be saleable as product; there would be no waste rock dumps. Any salvaged topsoil from slopes less than 30 degrees would be temporarily stored on the upper bench within the proposed mining area, and used on the first bench.

Concurrent Reclamation: Concurrent reclamation is not likely to be practical for Lakeview Thomas Pit operations since the pit floor area will be utilized for operations as mining progresses to the east. Any areas disturbed under this notice that are not routinely or currently used will be kept in a safe, environmentally stable condition. Noxious weeds on the Salt Lake, Utah County, and State of Utah Noxious Weeds lists will be monitored for, and aggressively treated, if present on these disturbed sites.

V. HOLE PLUGGING REQUIREMENTS (RULE R647-4-108)

All exploration holes drilled by Lakeview have been plugged according to the requirements of R647-4-108. Future drill holes, should there be any, would be plugged according to the same requirements. Drill holes would not be left unplugged for more than 30 days unless approved by UDOGM.

VI. IMPACT ASSESSMENT (RULE R647-4-109)

6.1 Water Resources

6.1.1 Surface Water

Lakeview's existing and proposed pit development and related operations are located in the Jordan River drainage basin, on the east slopes of the Salt Lake Valley. Annual rainfall averages between 16 and 25 inches (RPI, 1995). Mining operations in the Thomas area have not intercepted any stream channels, but there is an upgradient watershed area of approximately 100 acres to the southwest that could contribute runoff to the property.

During operations, drainage down the highwall face would include precipitation falling directly on the face as well as any runoff contributed from the up-gradient slopes. This precipitation would primarily remain trapped on the benches until it infiltrates or evaporates; some amount may course down to the next bench level. Any runoff that continues to the base of the highwall would stay at the base, as this is the low point of the pad area, until it infiltrates or evaporates.

As operations continue over time, this scenario would continue, with the only changes being a continual enlargement of the flat pit bottom versus the steep highwall slopes. Upon final reclamation, the pit floor would be graded to the east toward the base of the highwall, described in more detail in Section 4.4.2 Runoff from the highwall area and the pit floor would collect within these low spots prior to infiltrating.

There are no surface water rights or known springs located within the property boundary. A spring is located within the watershed area that contributes runoff to the Thomas area. It was described in the Revised NOI (JBR 2006) as water right 31-2387.

6.1.2 Ground Water

Ground water at the Thomas pit may be expected to be similar to that described for the Beck Street Quarry in the Revised NOI (JBR 2006). Several wells are located within a few hundred feet to the northwest of the property; at least one of those wells reports a static water level of about 60 feet below ground surface (UDWR 2005).

Groundwater Quality

Groundwater quality from sources underlying the Thomas Pit can be expected to be similar to the Beck Street Quarry as reported in the Revised NOI (JBR 2006).

The Utah Division of Water Quality has indicated to Lakeview that a Ground Water Discharge Permit is most likely not needed for their primary operations, as it is covered under the Permit-by-Rule, de minimus, category at R317-6-6.2.A.25. It is assumed that the same coverage would apply to the Thomas Pit area.

Lakeview would confine storm water runoff to the Thomas Pit site. Lakeview generates no wastewaters, conducts no equipment or aggregate washing, and properly manages

any potential contaminate spills (primarily oil and grease) to provide for protection of surface water and groundwater quality.

6.2 Wildlife Habitats and Special Status Species

Wildlife Habitats

The majority of the Thomas Pit property area is disturbed and essentially barren of vegetation; habitat for wildlife is limited to the property buffer area and the NE/SE corners, which provide habitat for small birds and mammals.. The slopes and drainages upslope of the operation, and above the property, are sites of grass/shrubs, with scrub oak concentrated in the draws.

Special Status Species

Because of the close vicinity of the Thomas Pit to the Beck Street Quarry operations (0.25 mile), as well as the similarity in available habitat, the special status species analysis reproduced below, from the Revised NOI (JBR 2006) is considered applicable to this Notice:

> No TES species have been recorded on or near the operations area. Due to the overall lack of vegetation and habitat onsite, threatened, endangered or sensitive (TES) plant or wildlife species would not likely occur in the area. According to correspondence received from the U.S. Fish and Wildlife Service in response to a request for threatened, endangered, and sensitive species information on an area including Section 13, T1N R1W, SLBM, the following species may occur in the area of influence of the proposed action:
>
> bald eagle (*Haliaeetus leucocephalus*) Threatened
> western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) Candidate
>
> These species are also included on the County Lists of Utah's Federally Listed Threatened, Endangered, and Candidate Species for both Davis and Salt Lake counties (Utah Division of Wildlife Resources 9/25/03).
>
> **Bald eagles** typically nest in large trees, primarily cottonwoods and conifers, although they have also been known to nest on projections or ledges of cliff faces. There is no nesting or roosting habitat on or near the property. Bald eagles are not expected to occur in the area and would not be impacted by the continuation of mining in the operations area.
>
> The **western yellow-billed cuckoo** is a bird that occurs in cottonwood-willow forests in the west. Populations in Utah have been historically noted to be uncommon to rare along river bottoms. Due to the lack of vegetation or riverine habitats in the operations area, this bird would not be expected to occur and would not be impacted by continuation of mining in the operations area.

According to the Utah Natural Heritage Program database Information Manager (E-mail correspondence, Dec. 2003), the long-billed curlew has a recent record of occurrence in the area. This species is included on the *Utah Sensitive Species List*. The long-billed curlew is a fairly common summer resident and migrant in Utah, especially through the central and more northern valleys. In Utah, long-billed curlews nest around the Great Salt Lake. They require short grassy fields and abundant vertebrate prey.

There is no habitat available for this sensitive species in the operations area.

6.3 Soils

There are some topsoils remaining on steep slopes and within the 100-foot setback area for the Thomas Pit. Any soils disturbed in the setback area, as for access roads, will be stockpiled near the road corridor and used to reclaim the road. Lakeview will attempt to salvage the relatively undisturbed soils on slopes less than 30 degrees on the remainder of the site.

6.4 Slope Stability, Erosion, Air Quality, Public Health & Safety

6.4.1 Slope Stability

The proposed final highwall design will be a 1:1 (horizontal: vertical) configuration and would have a 45 degree overall slope.

6.4.2 Runoff and Erosion Control

From an operational standpoint, Lakeview does not find runoff to be excessive or to require ditching, routing or other structural controls. Neither storm water runoff, nor eroded sediments will leave the property. Lakeview applies various best management practices, such as proper waste disposal, spill cleanup, oil handling, and diesel storage, which minimize impacts to the water quality of on-site storm water.

During final reclamation the pit floor will be graded generally eastward toward the base of the highwall, as shown on the Final Pit Plan map. Grading is - and throughout mining, will continue to be – in this direction so as to prevent runoff from draining westward off the property. Therefore, any required final grading is expected to be minimal and restricted to localized correction of the overall slope. Surface preparation after final grading will consist of the addition of organic matter, ripping the compacted pit floor, and seeding the pit floor.

6.4.3 Air Quality Impacts

The operations will result in low levels of air emissions, mostly fugitive dust. Water from onsite sources is utilized in active mining areas for dust control. Lakeview Rock Products has obtained approval to operate from the Utah Division of Air Quality according to Utah Air Conservation Rules, under Approval Order AO #DAQE-AN3141001-06. Compliance with these regulations assures compliance with air quality standards.

6.4.4 Public Health & Safety

All operations are conducted in compliance with applicable Mine Safety and Health Administration (MSHA) safety regulations. Health and safety measures that are employed at the Lakeview Beck Street Quarry would be employed at the Thomas Pit.

6.5 Proposed Mitigation Measures

If residential development occurs east of the pit, safety requirements could increase for people as well as wildlife. Lakeview Rock Products will work with the future developers and land owners of adjacent property to insure the site is sufficiently secured to protect both parties. The Thomas Pit property line above (east of) the highwall would be fenced to discourage access.

VII. Reclamation Plan (Rule 647-4-110)

7.1 Land Use

Historic & Current Land Use

The Lakeview Thomas Pit area has been used historically for mining and aggregate processing operations. Prior to mining, the area also provided habitat for wildlife, and range for domestic livestock. No grazing has occurred in recent times. Currently, the Thomas Pit area is being used for mining and associated crushing, handling, and loading operations. Rock aggregate products of various sizes are being produced and transported offsite. Access to the property from Highway 89/ the frontage road is gated.

Cultural and Historic Resources

The State Historic Preservation Office (SHPO) files were recently reviewed and a site visit conducted; no known cultural resources or historic properties occur in the area (Bighorn Archaeological, 2005; Appendix E). If previously undocumented cultural resource sites are encountered during the course of the operation, activities will cease in the affected area and the SHPO will be notified.

Post Mining Land Use

The proposed post-mining land use on the pit floor created by the removal of rock aggregate products will be light industrial or business park development. The Thomas Pit property, located between Beck Street and the Wasatch foothills, is expected to be highly valuable property, and under future economic conditions could be at a premium for development. Thus, it is expected that now, or under post-mining conditions, the property could be easily sold for materials, or for development.

At the close of mining, the pit floor will be assessed for growth potential, ripped, and seeded with a grass/forb mix to promote site stability, and provide dust suppression and weed control during a potentially short timeframe subsequent to mining and prior to development. Lakeview would maintain the property as safe and nuisance-free for the

public until such time it is sold or developed.

7.2 Extent of Reclamation

Access Roads

All on-site access roads utilized during production for the remaining life of the operations will be within the final pit limit configuration, and, therefore will be eliminated as production progresses. Only portions of access roads that extend onto adjoining properties on the east, west, and south will require reclamation. Approximately .2 acres on Utah State Road Commission property, .4 acres on UDOT property, and .6 acres on Granite Construction property will be reclaimed.

Safety Berm

A safety berm would be constructed at the top edge of the highwall, utilizing in-place materials, creating a trench/ berm system to reduce access to the highwalls. The layer of topsoil material on the surface in the area of the proposed trench/berm system would be gathered to a depth of approximately 12 inches at the time the berm is constructed. Four-foot high safety berms will be constructed around the pit. The equipment assumed to be used is a trackhoe or a dozer. The estimate includes removing 12 inches of topsoil from the 24-foot wide, 3,500-foot long berm/trench footprint area; constructing the 12-foot wide (at base), 4-foot high berm from adjacent, in-place material; and replacing the topsoil over the berm surface.

This soil would be stored temporarily adjacent to this narrow corridor, and used for reclamation of the berm.

Berms would be constructed at each end of the 5 benches.

Highwall Benches

As each highwall bench is completed, before moving to the next lower level, a small berm will be constructed along the outer edge using in-place materials. For the highwall benches, where seeding will be completed on a one-time basis as final surfaces are exposed, the in-situ material will be scarified and used as-is to provide cover for the seed. A mix of introduced and native rangeland species will be broadcast seeded on each bench. This, by necessity, will be a one-time attempt to revegetate each bench in order to provide some protection from noxious weeds and from erosion. No subsequent vegetation surveys will be attempted and no success standards will be applied to these benches. Over time, it is expected that slope raveling will contribute fines that will provide additional cover and water holding capacity.

Pit Floor

The pit floor would be graded to drain slightly to the east, toward the highwall. Prior to reclamation, 6 representative areas (approximately 4 acres each) of the pit floor will be sampled for factors to determine the floor's ability to support growth. Depending upon the results of those tests, amendments will be added as necessary to provide an acceptable growth medium. For surety purposes, it is assumed that organic mulch will be incorporated to the pit floor surface material prior to ripping and seeding. No topsoils

would be available for salvaging; no topsoils would be stockpiled for use in reclamation of the pit floor.

7.3 Surface Facilities

No mining-related surface facilities will be left as part of post-mining land use.

7.4 Deleterious Materials

There are no acid forming or deleterious materials present at this site. Therefore, no deleterious or acid forming material will be left on-site.

7.5 Revegetation Planting Program

At the conclusion of the operations, all trash, oil, fuel, equipment, debris and structures will be removed from the site and the site prepared for reclamation. Rehabilitation and reclamation activities will commence following cessation of operations, and will include the following:

1) Any trenches will be backfilled to eliminate safety hazards. No other backfilling is proposed.

2) As each highwall bench is completed, before moving to the next lower level, a small berm will be constructed along the outer edge using in-place materials, and the final bench surface will be scarified and broadcast-seeded according to the seed mix provided below. Timing of the bench seedings will be contingent upon when the final bench surface is exposed, and not restricted to the fall season. This would be a one time seeding as each bench is completed; no measures of revegetation success would be required.

Bench Seed Mix	lbs./acre
Intermediate wheat grass	4.5
Crested wheat grass	4.5
Bluebunch wheat grass	4.5
Four wing saltbush	2.0
Big sagebrush	0.2
Total	**15.7**

Over time, it is expected that slope raveling will contribute fines that will provide additional cover and water holding capacity. No subsequent vegetation surveys will be attempted and no success standards will be applied to these benches. The overall slope angle of the final quarry face would average approximately 45 degrees.

3) The soils salvaged from the footprint of the safety berm/trench area, will be used atop the safety berm. No soils or other growth medium will be placed on the highwall benches. No topsoils would be stockpiled for use in reclamation of the

pit floor or access roads.

4) All surfaces to be revegetated will be left in a rough and loosened condition. The safety berm will be uncompacted, and the placed topsoils will be spread to maximize infiltration and reduce runoff.

5) The highwall benches will be scarified as conditions allow. The setback area and pit floor will be ripped to a depth of 1½ to 2 feet and left in a roughened condition prior to application of organic material.

Seeding of the safety berm and the access roads will be completed in the fall, using the native seed mix provided below. Broadcast seeding will be the most appropriate method over these relatively small areas. The broadcast seed would be applied to the roughened surface. Manure would be added at a rate of 5 tons (dry) per acre. The following seed mix would be applied in the fall after operations cease:

Berm & Access Roads Seed Mix	**lbs./acre**
Pubescent wheatgrass	2.0
Russian wildrye	1.0
Thickspike wheatgrass	2.0
Bluebunch wheatgrass	2.0
Indian ricegrass	1.0
Prairie sandreed	1.0
Lewis flax	1.0
Palmer penstemon	0.5
Blanket flower	1.0
Big Sage	0.25
Rubber rabbitbrush	0.5
Total	**12.2**

5) Natural drainage channels will not have to be re-established because none have been intercepted during operations.

6) Pit Floor Revegetation Plan: At the end of mining, and once the pit floor is re-graded to drain gently to east, the pit floor materials would be sampled if necessary, to determine their ability to support plant growth. Because of the nature of the pit floor, it is presumed to be adequate for growth, with the possible exception of lack of organics.

The sampling of the pit floor material would be conducted from 6 representative areas. One sample of pit floor material would be taken from each 4-acre area and analyzed for factors including: texture, pH, conductivity, CEC, SAR, % organics, Total N, K, and PO4, and acid-base accounting. Based upon the results of this sampling, one of the following is planned:

a) The pit floor would be ripped to a depth of 1½ to 2 feet and broadcast-seeded with the below seed mix to promote site stability. This option assumes no organic material (manure) is needed.

b) In the event that sampling shows it's needed, composted manure at a rate of 5 tons/acre would be added to the pit floor, prior to ripping, to increase its effectiveness as a growth medium. The pit floor would be ripped to a depth of 1½ to 2 feet, to loosen the material and incorporate the organics. It would then be broadcast seeded with the below seed mix to promote site stability. The soil testing and addition of composted manure have been used in the surety estimate. Any other fertilizers or amendments determined to be necessary would be added as needed, but are not included in surety.

The property owner would monitor for noxious weeds, and would provide weed control measures according to County directives should noxious weeds pose a potential problem.

The pit floor would be seeded for the purposes of stabilizing the site during the interim period prior to development and, providing plant cover that is visually preferable to a gravel layer. A variance is being requested to the standard reclamation standards for this area, as detailed in Section 8.0 below.

Pit Floor Seed Mix	lbs./acre
Pubescent wheatgrass	2.0
Russian wildrye	1.0
Thickspike wheatgrass	2.0
Bluebunch wheatgrass	2.0
Indian ricegrass	1.0
California poppy	0.5
Lewis flax	1.0
White yarrow	0.5
Blanket flower	0.5
Sainfoin	2.0
Total	**12.5**

7) Trash, scrap metal, wood, buildings, and any extraneous debris attributed to the active mining will be removed and properly disposed of within one year of cessation of operations.

VIII. VARIANCE (R647-4-112)

The reclamation plans related to the proposed operations indicate that the following variances from the Division of Oil, Gas and Mining are proposed:

R647-4-111 Revegetation
Revegetation is proposed for the safety berm, the highwall benches, the pit floor, and portions of the access roads.

A variance is requested to exclude the highwall benches from reclamation success standards because they would be impractical to meet and impossible to measure.

IX. SURETY

All equipment costs include operating costs, maintenance, service, operator and supervision. These equipment costs include mobilization and de-mobilization. Equipment cost estimates for all operations except ripping were determined using Means Heavy Construction Cost Data, 19th Annual Edition. References to the particular sections of this manual or to the DOGM rate sheet are shown. These cost estimates are supported by spreadsheets included in Appendix D.

9.1 Gates, Signs, & Fencing $ 12,633

A gate is already installed at the entrance to the Thomas Pit operations area. A warning sign will be placed at the gate. Signs would be placed every 100 feet along the safety berm to warn the public of the highwall danger ($6,000). Fencing would be installed along the eastern length of the highwall safety berm, to tie into the existing topography along the south and north sides of the property ($6,633).

9.2 Pit Floor Regrading $ 1,407

The 21-acre final pit floor will require minimal grading to slope gently to the east, using a Caterpillar 16 dozer and/or grader.

9.3 Safety Berms $27,764

Four-foot high safety berms will be constructed over the 3,500-foot highwall perimeter on the east, north, and south sides of the pit. Construction of the berms would be as described above in Section 7.2. $19,911

Bench berms would be constructed at each end of the 5 proposed highwall benches. $ 75

Safety berm/trench footprint topsoil removal & replacement $ 7,778

Ref. Means 02315-424-0300

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7.4 Cleanup $22,725

General site cleanup and trash removal is estimated assuming $75 per acre over the estimated 15-acre area to be cleanup at the end of mining ($1,125). Removal of portable equipment and the scale house is estimated to take 20 'lowboy' trips ($12,000). Crane use is estimated at 10 days ($9,600).

7.5 Revegetation $33,858

Revegetation is planned for the safety berm (1.2 acres), the highwall benches (5 benches – one time seeding), the pit floor (21 acres), and portions of offsite access roads. It includes surface preparation including ripping of pit floor and scarifying of the highwall benches. Seed would be broadcast on the benches and safety berm, and drill-seeded in all areas of the pit floor that reasonably accommodate the drill seeder. Areas inaccessible to the drill seeder would be broadcast seeded. Pit floor sampling parameter costs are included in Appendix D.

Safety berm (1.2 acres) $ 546

Benches (4.8 acres) $ 4,320

Pit Floor $25,725

- Sample pit floor 6 @ $450 X $75/sample = $3,150
- Add composted manure 21 acres at 5 tons/acre = $3,675
- Rip pit floor 21 acres @ $620/acre = $13,020
- Seed with pit floor mix @ $280/acre = $5,880

Access Roads $ 3,268

- Upper access road: rip and seed .6 acres = $679
- Switchback: re-grade 405 ft.length; seed .2 acres = $2,136
- Driveways: rip and seed .4 acres= $453

7.6 Mobilization and Demobilization $10,000

Equipment: D10R dozer, 992 loader, trackhoe (Cat 330), Cat 16 grader, crane (40 ton) at $2,000 per piece.

Reclamation Total $108,388

Supervision during reclamation. 10 percent of reclamation total	**$ 10,839**
Subtotal (1)	**$119,226**
Contingency (10%)	**$ 11,923**
Subtotal (2)	**$131,149**
Escalation (for 5 yrs. @ 1.6% per yr.)	**$ 10,833**

TOTAL $141,982 **Rounded TOTAL $142,000**